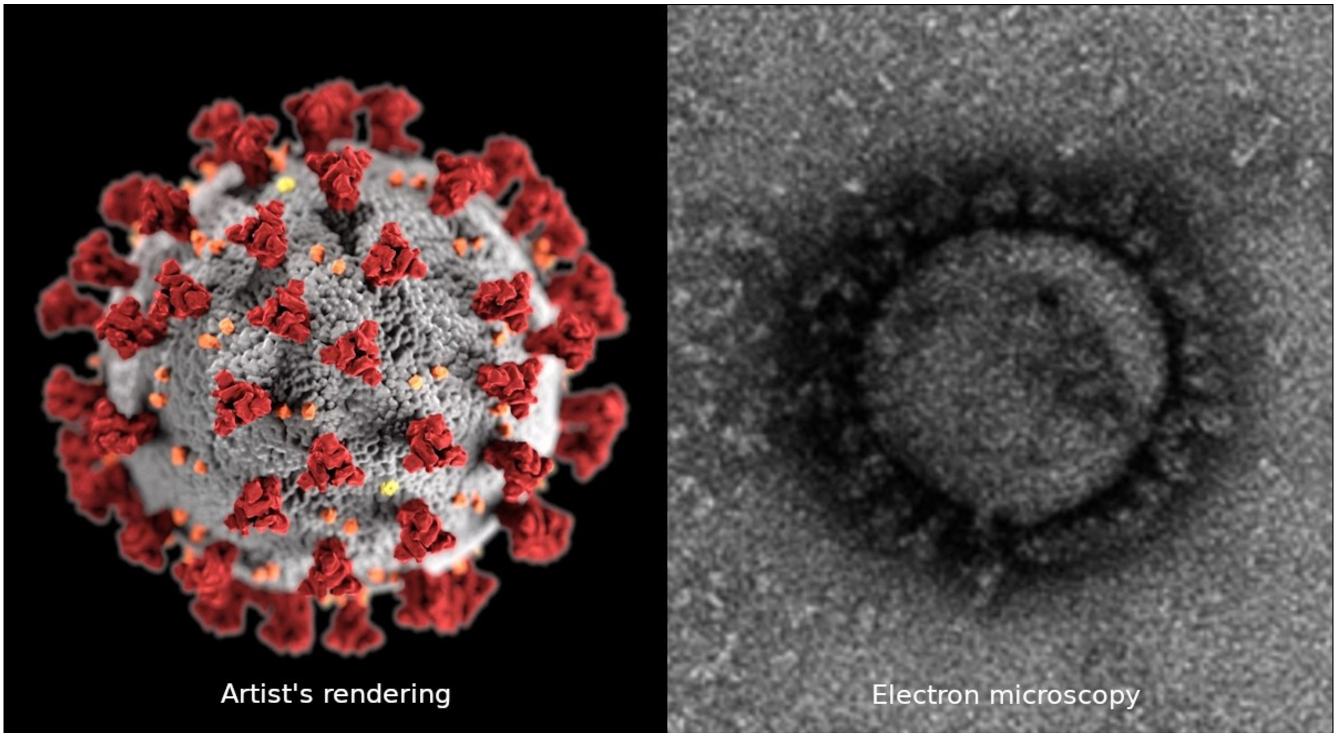
Philosophy of science basics:

biomedicine, virology, and Covid-19



Transmission electron microscopy shows us fuzzy shades of gray. Do you see spikes? With a little imagination, I see a crown of curly fuzz or perhaps mushroom-like protuberances. Not a hint of anything spiky and red. Spiky things can be painful. Red is the color of blood. The artist rendering conjures up a medieval weapon like a mace having just been wielded on a victim. The picture on the right might as well be a dust bunny under a couch.

Is vaccine hesitancy rational?

Last time we broached the pandemic topic, we asked the *logical* question "*Can* vaccine hesitancy be rational?" To many, those who think hesitancy is always in order if a decision is important, the answer is obviously yes. But genuine emergencies may sensibly override the appropriateness of such hesitance. In typical analytic fashion, we were obliged to spell out (with the help of Stephen David John) in some detail the reasoning behind why one might think the emergency excuse may be overplayed. That bare bones logical question aside, this time we are going to stick our necks out further and ask the *probability* question: *Is* it rational? This "is" question has an empirical character; all such questions go beyond logic to ask about conditions in the world. Not just logic, but science and history, both inductive (experience-dependent) practices, will have especially pertinent things to say about it. Beyond needing to ask about the nature of scientific practice, we will be obliged to review aspects of biomedical science – virology, in particular – as well as the history and cultural environment in which this peculiar science is embedded. (Why "peculiar"? We will see, shortly…)

Again, probability questions are answered by seeking out and assessing evidence *in the world.* Outside of criminal contexts where motives – invisible things – must be inferred (at great moral risk), *circumstantial* evidence is the only real evidence we can hope to have – or need – for empirical conclusions. We have to ask, given what we may learn about the past and current environment of an issue, what is best to believe? In philosophy, that means, what it is *rationally defensible* to believe?

If it looks like a duck, walks like a duck, and quacks like a duck - a philosopher will ~~quack~~ be quick to tell you[1] – it might *not* be a duck. But would you *bet* on it *not* being a duck?... So the short answer to the topic question is: *Yes, one might be excused for being hesitant.* We will belabor this answer in what follows.

The two important things to consider are the nature of the science and its points of connection with the rest of human culture.

Socio-cultural context: money and science

What do geophysics and biomedicine have in common that is also peculiar to them as sciences?

They are hybrid sciences.[2] Beyond that, they share a curious socioeconomic feature: the best paid practitioners in *any* science are employed by the fossil-fuel industry and biomedical industrial complex respectively. These can afford to pay their scientists and *especially those who manage them* top dollar for the best talent. Where do they get this kind of money? Society has decided, if market forces are an indication, that these are the most valuable of all the sciences. Moreover, *managing* scientists, even more than *doing* science, in these areas is among the most productive careers. Why should this matter to the integrity of the scientific enterprise, in these fields and more generally?

Who is the highest paid U. S. government employee?

Hint: It's no one in Congress, nor the Supreme Court, no top-ranking general in the military, not even the President. Two years ago, few would have recognized the name of this person. Today, everybody can.[3]

Again, although some may want to go that far, we are not here interested in making a criminal case. Rather, we are making suggestions about what a reasonable person should conclude out of concern for their own as well as the interests of those they care about, whether this class encompasses a handful of people or the whole of humanity. The observations we make address the credibility we should assign to and consequent deference we owe biomedical/political authority – *given the way world is organized.*[4]

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[1] Is under an epistemic obligation to remind you.

[2] By "hybrid," I mean, these sciences directly implicate anthropocentric interests. Physics is indifferent to human interests. Geophysics is not. We live on this planet. What happens here impinges on us. Similarly for biology divorced of therapeutic curiosity and medicine.

[3] Though *even before then* they were the highest paid.

[4] I borrow this crafty phraseology from Stephen David John who used it his talks on vaccine hesitancy.

Before there can be such authority, there must be an economic complex. Since when did a “biomedical industrial complex” become a “thing,” a force to align or contend with?

It started about 150 years ago when “germ theory” was advanced by giants in the early history of biomedicine Louis Pasteur in France and Robert Koch in Germany. The theory posited illness-causing entities too small to be seen by the naked eye. Microbial theory offered to explain the observable symptoms of illness and, as a model, lead to many breakthroughs in medical treatment of illnesses. Moreover, advances in the microscopic detection tools culminating in transmission electron microscopy lent the theory more empirical legitimacy. It was no longer a matter of *inferring biological entities from mere chemical reactions;* such tools permitted glimpses of the substantial forms of the toxic chemical-producing agents themselves.

A rough sketch of virology[5]

Rough is good enough for our purposes. We are not teaching biomedicine anymore than we are attempting criminal indictments. We are tracing, only tracing – not filling in – a picture. And that is all that is required to make explicit the logical leaps that may motivate hesitancy.

Symptomology is what you see and experience about illness.

A **disease** is a concept, an abstract device for summing up symptomology. It is more like a set in set theory than a box from Amazon containing what you ordered, the contents being the symptoms. Diseases, like sets but not like cardboard boxes, *as such*, are not observable. What they contain or comprise is.

Symptomology is plainly empirical. A disease is not. It is, as philosophers of science put it, the first step in loading up observation with the proper hooks or anchors for attaching a theory. It collects a cluster of symptoms so that we can address the set a whole, as a thing, an entity, and begin to look for an understanding of the thing that may help us relieve or eliminate the thing, assuming it is desirable to relieve or eliminate. (The designation “diseased” already carries with it negative connotations; so it is normatively loaded; hence, it is desirable to minify or be rid of it.)

Germ theory was devised as a theoretical model to explain the symptomology of certain illnesses. As a theory, it is a story we may tell that enables us to grasp how the cluster of symptom comes about. Understanding this is the next step in minification or riddance. If we manage to understand the **mechanisms of action**, the causal and developmental processes of illness, we may, perhaps, devise a way to block them. Or help already existing natural mechanisms of counter-action – the immune system, for example – to block pathogenesis.

The concept of a **virus** is a later postulate of germ theory. As the concept of a **bacterium** was an earlier one. The historical progression from bacterium to virus is relevant for our discussion: for a long time after they were first postulated, viruses had little or no empirical features, they remained *un*visible. The discovery of the observable features of bacteria inspired the general theory of microscopic disease-causing entities, germ theory, in the first place. Viruses, by contrast, were a later and controversial addi-

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5. Birds of prey tend to be farsighted. Insects seem to have the best microscopic vision in nature.

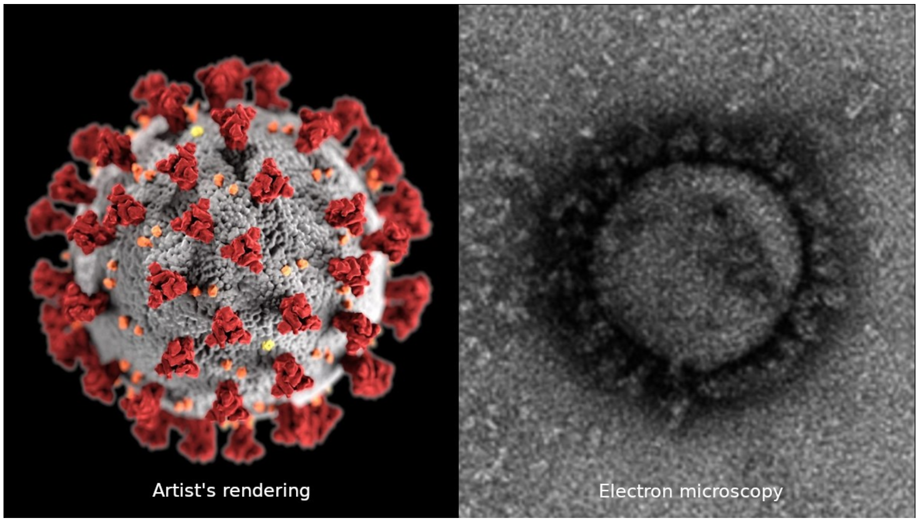
tion to the theory. If tiny things, we could barely see, may cause disease, why not *tinier* things we can't (as yet) as well?

Some diseases seem caused by microbes too small to be organized like bacteria. These, before pre-electron microscopy, featureless, microbes were dubbed "viruses." Initially their existence was inferred. We could observe that *something* maybe smaller than a bacterium caused cell damage, dysfunction, or death. Viruses were assigned this role. Chemical traces, toxic proteins, etc. for which we did have empirical tests (e.g., in vitro assays), chemical ones, were observed. That much we could "see." The rest, the stipulation of the things that were the causative agents of what we could see was, early on, conjecture – a bit of applied ontology. (The way the planet – or now more astronomically-correct, "planetoid," Pluto was discovered, for example.) Genes, initially also a non-empirical postulate, were also *first* implicated into existence in a similar way.

Time passes, technology improves and some of the early metaphysical conjuring found an *observable* to attach to. With the advent of electron-microscopy, visual images of some of these microbes became available. What were once more notion that observation had their pictures taken. (Likewise, eventually, we stopped needing to imagine a Pluto and were treated with images of it.)

So far, so good.

But having an image of a thing is not enough. The universe is crowded with things. *How do you know the thing you have an image of is the thing you hypothesized as the causative agent of your earlier observations?* How do you know the thing in the real world corresponding to the thing in the image you have is identical with the hypothesized thing with the assigned disease-causing functionality. In the present case, the virus, the one called "SARs-CoV-2"? How do you know the artist rendering – the hypothesized thing with all the causative attributes (pretty "red" "spikes" and all) it has been mentally saddled with, on the left refers to the thing photographed on the right:



Remember we are looking for the suspect that is committing the crime. We need to see the agent *do* the crime, see the physical process that *connects* the thing in the image with the disease, or the collection of symptoms we have identified as defining the disease.

We need a grasp of “the mechanism of action,” in this case, disease – better, *symptomology* – causation.

The direct connection is via complex chemical compounds, proteins and enzymes. This connection is an inference several times removed from the raw sensory data involved in chemical analysis. It is not like watching a lion take down an antelope on the Savannah. Nor even like footage of a bacteria penetrating and hijacking, devouring, and decomposing a living cell. It is of a different order altogether. Virology’s place in biology is like that of string theory in physics: it is a fascinating model for explaining phenomena. Unlike string theory, however, virology is too available for commercial exploitation not to raise suspicion. That *inference gap* is sufficiently wide and well-positioned in the scheme of human avarice to corrupt science.

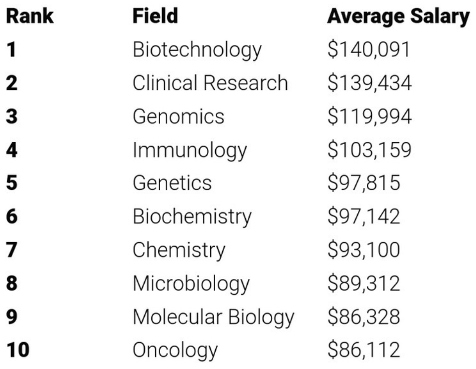
“The Science”

References to “the Science” to the extent they refer to anything characteristic of science with a small “s,” must be referring to the general practice of attending to the world at the edge of our senses, aided or unaided, that philosophers call empiricism. This is a very general notion and not very enlightening. When someone knocks on your door and you go see who it is, you are being empirical. Remaining in your armchair and speculating about who it might be is not being empirical. Traditionally, science has meant the application of a rigorous methodology to the application of empiricism. Referring to the Science may suggest that there is *a* rigorous scientific method. This is not the case. There are *many*, more or less scientific, methods. The world at the edge of our sensed is many faceted. Each face has a science attached to it and each of these its proprietary methods.

Moreover, each facet of the world at the edge of our senses does not wear its importance on its face. *Empirically*, mycology is just as important as cosmology or limnology. “Importance” is not manifest under a microscope or a telescope.

Lately, “the Science” has come to refer to *one* branch of scientific practice, in particular: biomedicine, specifically subfields like virology and epidemiology. How did biomedicine come to hog the reference of the term “science”? Obvious: the Covid-19 pandemic.

Not so fast, the perception that biology and biomedicine are *the most important* of all the sciences *predates* the pandemic by decades. What better indicator of the importance of a field of science than the amount of money its practitioners are paid? Which are the top ten most highly paid scientific professions?



Rank	Field	Average Salary
1	Biotechnology	$140,091
2	Clinical Research	$139,434
3	Genomics	$119,994
4	Immunology	$103,159
5	Genetics	$97,815
6	Biochemistry	$97,142
7	Chemistry	$93,100
8	Microbiology	$89,312
9	Molecular Biology	$86,328
10	Oncology	$86,112

Highest paid careers in science. Source: https://www.straighterline.com/blog/high-paying-science-jobs-that-are-in-demand/

It is definitely not particle physicists or paleontologists. Who, with their priorities straight, would value a muon or lose sleep over what killed the dinosaurs more than human health? Or is it that muons and dinosaurs don’t have many lobbyists in congress? I guess this explains why the meat, sugar, alcohol, fossil fuel, tobacco, and pharmaceutical industries are slowly fading from the scene: *we are waking up to the importance of the quality and longevity of life?*

Science and technology are progressing at great speed. What has *not* progressed noticeably since ancient times are patterns of thought and behavior. Abraham Lincoln or Steven Pinker aside, the *betterness* of the "angels of our nature," historians and evolutionary biologists must sometimes tire of telling us, is – and always has been – so-so. Fear, greed and stupidity remain as pandemic as ever.

This gap between development in one of our abilities and stagnation in another is of philosophical interest.

The problem with doing science is that we can't handle the world *just as it is*, as the pig it presents itself as. We have to embellish it, put lipstick on it. Colorize it. Every pig needs lipstick. *Even in science!* – a consequence of the fact that we *must communicate* our observations and are *bounded* by the limitations of our biological, psychological, and sociological envelope place on communication. Science is *not* supposed to be about *us*, our vulnerabilities, tastes, or wishes.[6] Rather about the world out there, the way it is or would be if we weren't here to observe and apprehend it. *That* world has no color as we understand it. Or much of anything else *as we understand it*. It certainly doesn't *care*. Curiosity about things that *do not care* is as good a definition as any of science. Things that are not good, nor evil, nor beautiful, nor ugly. That are unimaginably sterile – not to say, indecent, even pornographic – if only those terms were not themselves loaded with normative grime. This thought is surprisingly hard to grasp.

Instead, what is often called "science" is actually technology or *applied* science. The "applied" qualification makes all the difference in the world. *Science isn't about us, but applied science/technology is.* Very well, but the latter does not pretend to "objectivity." Intersubjectivity suffices. Intersubjectivity assumes we are not pretending to see things the way they are independently of our interests, collective or otherwise. Technology, which encompasses all of medical science, is obviously about *us*. Medical science only makes sense as applied to biological beings subject to impediments to their flourishing for the allotted time typical of their species. We want to put off suffering and dying as long as possible. Rocks, as far as we can tell, don't have such interests.

Curiosity about "things that do not care" is a curious curiosity especially in the areas of science where the objectivity sought is highly qualified by an evident agenda as in biology and biomedicine, for instance. The curiosity motivating their study is not idle. We are alive and mostly want to stay that way. Our curiosity is thus informed. We want to understand how living things work, how they flourish and how they suffer and die. We want to learn things that promote the first and forestall or prevent the second. And we don't have all the time in the world. When you are mortal, you must cut corners. In the mean time, there is suffering and death. *But cutting corners is not a principle of science.*

In the mean time, also, we have other passions, pastimes, and projects that we are not prepared to abandon even while there is suffering and dying. Pressure from these further motivate the cutting of corners. Until it becomes impossible at least, we want to flourish in the face of all the suffering and death. There are limits to our compassion. Abandon those limits, and you will become an anti-natalist.

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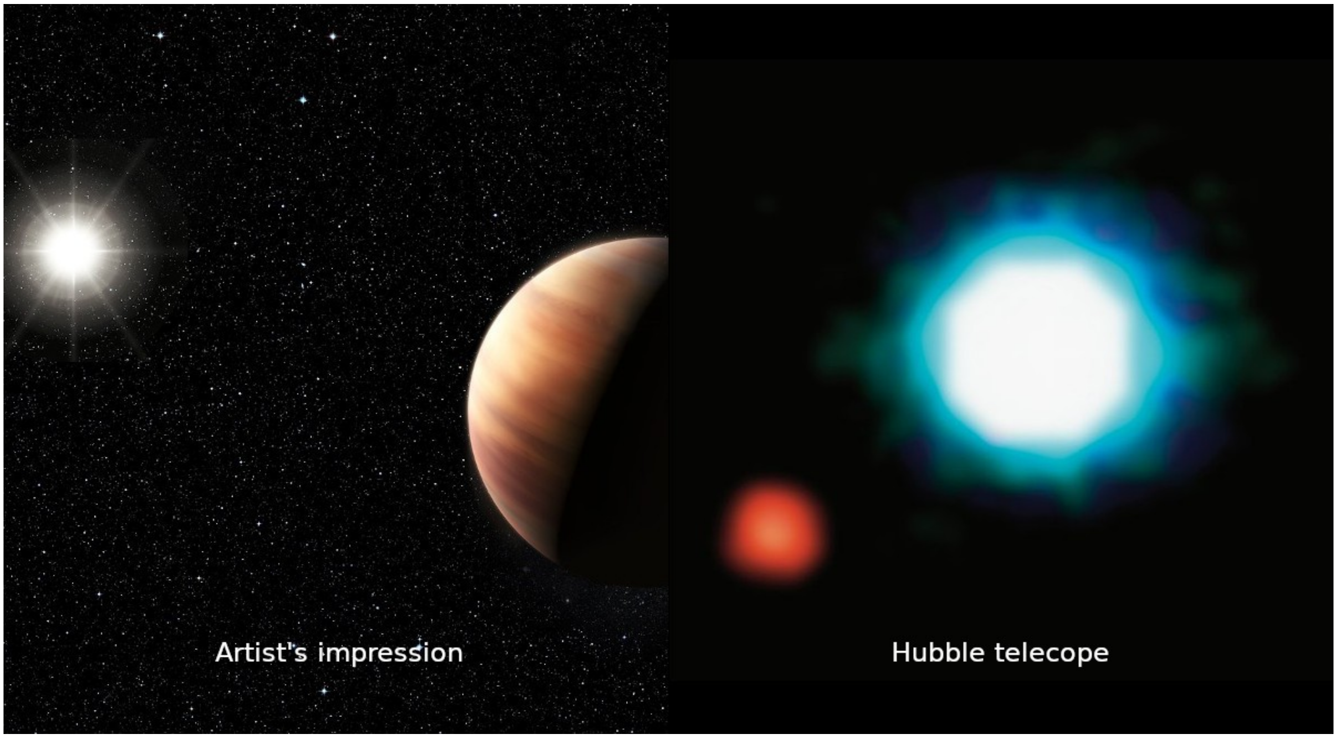
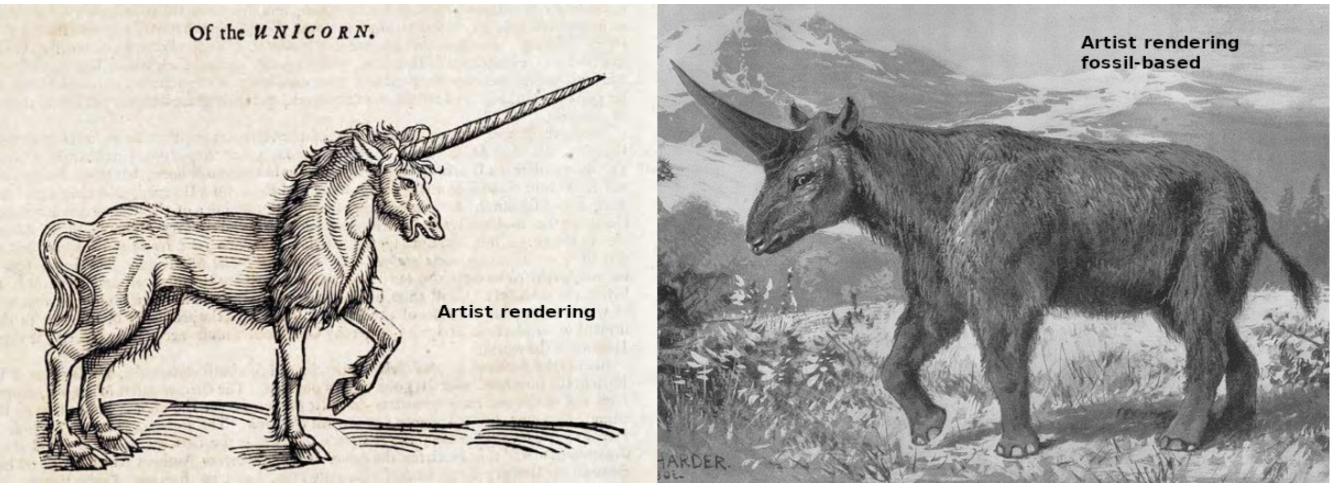
[6] Even psychology is *not supposed* to be about what this or that psychologist thinks, feels, or believes. It is *supposed* to be about what we *generically* think, feel, or believe. But even this species-level self-referentiality poses philosophical problems for the kind of objectivity science is in pursuit of.



On the left is how an artist imagines another world with its own star. On the right is the best image from the most powerful telescope to date, the Hubble (soon to be replaced by the James Webb) telescope, of an exoplanet, a planet revolving around a distant star... It might easily have been car lights seen through a foggy windshield at night. You need to have been primed with the thought to see in the picture an exoplanet (the little red blob) next to its sun.



Two artist conceptions, but the one the right is based on a fossil record of an extinct precursor of the rhinoceros, who, it is speculated, co-existed with our ancestors... Maybe someday *we will find evidence that all* posited *viruses are* real...

What we know of viruses that has been useful is not through observations via electron microscopy, however, rather through chemical reactions involving molecular structures such as proteins, enzymes, and host of other sub-cellular substances, how these react with each other, and the effects inferred from these reactions on larger, quite observable structures such as cells, organelles, organs and somatic symptomology. (Similarly, with what is currently known about conditions on exoplanets. We infer from the observable to the unobservable.) We make models of the unobservable, conduct experiments on the basis of the models, refine them, conduct more experiments on the basis of the revisions, and so on. Through this process, at some point, we hope to understand enough of the functional mechanism to effect treatment or remedy at the symptomological level. What work does the virus concept play in the logic of research and discovery? Perhaps credible as a heuristic, but when the term undergoes ontological hypostasis, becomes a "thing," in lay and expert minds alike, it lends itself to mischief. It is liable to be a marketed as a threat. A threat requiring protection from. And an industry poised to offer it. For a price.

Summaries of "The COVID-19 Fraud & War On Humanity"

by Dr Mark Bailey and Dr John Bevan-Smith; presented by Dr. Samantha Bailey, November 14th, 2021.[7] The pdf can be found here.

Video presentations incorporating a reading of the article

Part 1
https://odysee.com/@januszkowalskii1979:e/%28Dr.-Sam-Bailey%29-The-Truth-about-The-CONvid-1984-Fraud---War-on-Humanity-Pt-1:a

Part 2
https://odysee.com/@drsambailey:c/Covid-19-Fraud-and-War-on-Humanity-Part-2:7

Part 3
https://odysee.com/@TheTruthSeeker:f/Covid-19-Fraud-War-On-Humanity-Part-3:6

Other sources have made similar claims, but this paper/presentation is a well-organized, well-documented, medicine-based (a bit rushed but still accessible for a general audience), critique of the science in the service of the current pandemic response. The claim is that science has been perverted, and that this has grave consequences. I detect no ideological bias other than a genuine concern that human health and medical science are being compromised by the greed of the powerful. (Perhaps you do.) But, I would argue, this is hardly news. It has been a historically ever-present moral challenge, endemic to societies that have permitted power concentrations. The speed and scale, however, of the alleged fraud is historic.

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[7] Drs. Mark Bailey and Bevan-Smith are fairly obscure figures. There is some suggestion that Bailey was formerly associated with the medical school at the University of Otago in New Zealand and possibly married to Samantha. Bevan-Smith may be an English professor, business man, and/or connected with a ministry of justice in New Zealand (?). Dr. Samantha Bailey, however, is a well-known and respected medical doctor and clinical researcher as well as telemedicine celebrity in New Zealand. Her celebrity and integrity was tarnished – or enhanced – by being fired in 2020 from her television position for announcing that she would not be vaccinated. She went rogue with her medical vice on Youtube and has been partially censored there, too. She became associated with the authorship of the book *Virusmania*, originally published in 2006 and recently revised to include chapters on Covid-19. The authorship also comprises award-winning, German journalist Torsten Engelbrecht and distinguished European experts in clinical and biomedicine Dr. Claus Köhnlein, MD and Dr. Stefano Scoglio, BSc PhD (Nobel Prize in medicine nominee). The *Virusmania* group is well-placed to allege fraud in the current pandemic since they had published extensively on prior scandals in virology... What's with the New Zealand connection? Of all places? Along with Australia, New Zealand has been at the leading edge of authoritarian suppression of information and draconian mandates. The human rights issues there are particularly acute and may auger what is in store for other parts of the "developed" world. These sparsely-populated European politico-economic "backwaters" (in the eyes of major world powers) may be the perfect place for totalitarian experiments in *a Western cultural context*.

The claim is that four medical aspects of the pandemic are fraudulent, leading to the stark conclusion that *there is no SARS CoV-2 virus, no Covid-19 disease to go with it, and no real pandemic* – at least of the medical kind. If true, this goes beyond being a crime against public health and a violation of human rights, but does serious damage to trust in science, which was not in the best of health prior to the pandemic. And, if this is true, it may augur a new dark age, in which science is – no less than politics, already infamous for this – revealed as deeply vulnerable to corruption.

Immediately below is a quick summary of the paper, followed by a more extended summary, then still more detailed discussions of its critical points, and, finally, general comments on the philosophy of science and the cultural contexts in which science operates.

1. Isolation

Traditionally, germ theory since the 19th century has been about isolating microscopic pathogens from living hosts, and attempting to understand these and how they work in order to find treatments for the illness they cause. That is not what has happened with SARS-CoV-2. Instead, in virology, the ordinary meaning of "isolation" – "to separate something from something else" – has been adapted to mean something like "mix something with something else, then find it again." The SARS-CoV-2 virus has never been isolated in the traditional sense. This new definition of isolation raises suspicion from the start.[8] But it gets worse...

2. Genomic sequencing

The claim here is that the so-called novel coronavirus SARS-CoV-2 is neither novel, nor even a virus, but a gene sequence that was artificially generated years before the pandemic and even patented in preparation for future use. The gene sequence never existed in nature, but was a Frankenstein mix of bits of genetic material from various sources that do exist in nature.

3. PCR tests

The artificially generated gene sequence just decribed was used to program the PCR test, to inform it with what to look for. But the PCR test was never designed or intended to diagnose any disease. It merely detects the presence of genetic material it has already been prepared to look for. It looks for genetic sequences and chemically replicates them to make them more obvious. It is called amplification. Essentially, it acts like a chemical microscope. Used correctly, it only makes more visible what it has to work with or is already there. But, unlike a microscope, it has to be primed or prepared in advance for what it should be looking for and amplifying. Think of it like a microscope designed to see *only one*

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[8] A list of eminent medical and science professionals who deny there is a disease-causing pathogen called to SARS-CoV-2 (bottom of page). A statement on how a virus *should* be isolated (SOVI).

specific thing up close. It must already know what that thing is. This is where the fraud enters. Given that it was designed to look for the artificial genome sequence above, and since this is a mix of other genomic sequences, some of them quite common, the test is going to return positive a high percentage of the time.

4. Outbreak modeling

If the PCR test is described and interpreted as a diagnostic tool, it is going to show that a lot of people are infected with a virus that are not, in fact, infected with anything *this test* can determine. (Of course, they may be unhealthy or suffering from other causes.) But the PCR test, because it is so sensitive and accurate at what it does when used correctly, has been uncritically accepted by many in the health field as evidence that a pandemic was afoot. Next, disease modelers, who try to predict how fast disease spreads based on measured rates of infection, plugged in the PCR-measured infection numbers into their mathematical models and got astounding rates of spread, scaring politicians as well as even many scientists who let their guard down, not believing that the information they were getting could possibly be flawed, at least not to this degree. Scientific specialization is so extreme that experts in one field simply rely on experts in other fields to provide honest and correct information. With experts deferring to other experts and politicians deferring to the alarmed experts, a general panic ensued, followed by crazy, uncalled for, suppression policies...

And, of course, massive funding for pharmaceutical companies.

One may argue about how much of this was deliberate and how much of it results from a flawed system – or, most likely, a mix: a system with flaws that some saw opportunity to exploit, but that it has happened is the contention. Why should we believe it? We’ll look more closely.

A more detailed summary

1. Isolation

SARS-CoV-2 isolation claims have relied on two bits of evidence:

i. Cytopathic effects (signs of disease at the cellular level) of an alleged virus on cells in cultured environments, *in vitrio*. But the chemicals in these artificial environments are sufficient to cause the effects. The cells die not because of a virus but because they are poisoned beforehand.

ii. Transmission electron microscopic images that give us something novel and alien to “see” in the vicinity of dead cells in culture. But there are many particles in the vicinity of dead cells such as exosomes, excretions of decaying cells, that look like, or can be modified to look like, the red spiked balls in the artist renderings we are presented with.

> The first and foundational fraud is the claim that the virus has been isolated and is the aetiological (causal) agent of COVID-19. Without acceptance of this (always unsubstantiated) claim, the COVID-19 fraud would implode,... In other words, the fraud of isolation relies on the violation of accepted meaning to deceive, when, for instance, an “isolate” has no more been isolated than a wishful thought. This sets up a viciously circular discourse from which there is no escape: the

premise of existence is established by the lie, and through its absolute insistence, existence of the virus is conclusively and repeatedly “confirmed”. Virology thrives on this insistence, for without it, there is no virus, no virology, no “positive” PCR “tests”, and no more jobs for virologists inventing viruses for Big Pharma to fight with miraculous “vaccines”. That is also why ideas that run counter to this narrative are censored by the government and by the mainstream media, and why this country’s security agencies are terrorising the people they claim to be protecting, enforcing upon them the virological fraud on which the whole charade depends. The entire state apparatus is currently dedicated to this cause.

2. Genomic sequencing

The virologists claim that they have worked out the entire genetic structure of viruses such as “SARS-CoV-2” and uploaded this onto databanks, as Fan Wu, Peng Zhou, Na Zhu, Leon Caly and their teams did in early 2020, and as many have done since. Again, they claim that they have an “isolate” of the virus but this declaration is made after they have “constructed” the genome from their mixed brew containing genetic fragments of unknown provenance. In the case of Fan Wu et al., despite there being no bats for sale in the indoor seafood market where the patient worked, and despite the inventors being unable to confirm an intermediate host or reservoir for their virus, they chose, nevertheless, another in silico bat coronavirus as the template with which to create WH-Human 1 (SARS.-CoV-2). 52 This, no doubt, is all part and parcel of virology’s need for scientific validation, expressed in its 20-year quest for bat El Dorado wherein, it imagines, lie all the coronavirus treasures of the world. 53 In the meantime, it keeps inventing viruses to feed Big Pharma to keep itself afloat.

The process virology uses to claim “isolation” can be summarised as follows. From the biological “soup” taken from patient’s lungs or nose swabs containing all sorts of material from the human subject, innumerable commensal microbes and potential contaminants, de novo assembly platforms search for short genetic fragments. After finding millions of unique fragments in the brew, these software programmes piece together a “genome” (one long piece) based on parameters set in the programme.

Along the way there is a bit of cut-and-pasting and if pieces are “missing”, other ready-made templates can be added to fill the gaps. However, the man-made algorithms, probability models and arbitrary selections cannot deliver the “yes” or “no” answer to the question of its physical existence in nature, not least because any coronavirus “genome” used as a template in its production will likewise be propositional, the methodology providing no confirmable connection with the material or physical universe, making the new member of the Coronavirus genus merely another product of virology’s sui-referential processes.

An analogy for these processes would be that you find a million cards on the floor, each with partial sentences. You start arranging them into full sentences and then eventually a story. If some bits don’t fit you discard them, and if bits seem to be missing you borrow a paragraph from another story. But how would you know that this was an existing story and not something you had just made up? And why could there not be ten smaller stories in there, or no story at all? In short, you cannot claim to know the story unless you have access to the complete story before you start. And herein lies virology’s deception – virologists do not work with a complete

> genome because they do not work with a complete virus. They work with random bits of biological material and then tell us that it constitutes evidence of a virus. However those of us that examine their experiments carefully can see that there's a problem: there is no material proof of any virus.

The article follows with an analysis of the studies (Fan Wu, Peng Zhou, Na Zhu, Leon Caly) purporting to have worked out the genetic structure of SARS-CoV-2....

3. The PCR test

> The third pillar of the COVID-19 fraud concerns the misapplication of the PCR (modified as RT-PCR, reverse-transcriptase-PCR in order to detect single-stranded RNA because the PCR can only reliably amplify DNA). This misapplication centres on the amplification of RNA sequences taken from human subjects said to belong to SARS-CoV-2 and also a disease termed COVID-19. However, the PCR cannot confirm either of these things; its capability is solely confined to the amplification of the selected nucleotide sequences, not to determining their provenance or significance. This fraud, then, relies on the attribution of meaning to the amplified sequences, which is supplied by: (a) reference to the imaginary in silico genome and not to a proven physical entity called SARS-CoV-2; and (b) a "disease" that with absurd circular reasoning has been defined by the PCR result itself. SARS-CoV-2 has never been located in a human subject, isolated, purified and subsequently photographed and biochemically characterised as a whole unique structure. It has not been proven to exist in nature; in fact, key component parts were patented in 2007 which, by definition, would require them to be man-made. 56 With regards to the short nucleotide sequences being detected by the PCR kits in use, they exist but come from somewhere else, not from a virus labelled "SARS-CoV-2". (If it is done poorly or at high cycle numbers, as has been typical, the target sequence may not even exist in the sample and a "positive" result is simply an artefact of the process.) Furthermore, the PCR cannot diagnose the infectious status of a human in any proven way and no consistent link has ever been found between a disease state and the PCR results. In short, the misapplication of the PCR means that COVID-19 is a scientifically meaningless construct that represents nothing more than a referential illusion....
>
> In other words, the PCR has been calibrated to detect genetic sequences of a "virus" that has not been shown to exist in nature. Instead, it is detecting sequences of unknown provenance that are found in some humans and reportedly in some goats, a quail, and jackfruit too. As Kary Mullis, the Nobel Prize winning inventor of the PCR pointed out, the PCR "doesn't tell you that you are sick, or that the thing that you ended up with was going to hurt you or anything like that."

4. Outbreak modeling

> The astronomical case numbers produced by the PCR method became the basis of the reproduction number (R_0) that initialised all COVID-19 outbreak models. Yet even relying on these worthless numbers, outbreak modelling, long notorious for its predictive fallibility, still managed to produce predictions that were spectacularly preposterous.

> The most prominent purveyor of this speculative nonsense was Neil Ferguson of Imperial College London (ICL), lead author of ICL's Report 9, published without peer review on 16 March 2021, which predicted that 550,000 people in the UK and 2.2 million people in the US would die within approximately three months without nonpharmacological interventions. Its dire predictions caused governments to change horses mid-stream and predictably caused widespread panic amongst an unsuspecting public, creating an environment of fear and a willingness to comply with programming for public scrutiny, Ferguson found it ridiculed by commercial and academic experts alike. One commercial expert thought it a "buggy mess that looks more like a bowl of angel hair pasta than a finely tuned piece of programming", while scientists at the University of Edinburgh reported that it failed "the basic scientific test of producing the same results given the same initial set of parameters". Ten days later, Ferguson, who believes models are "simplified versions of reality", predicted, in another co-authored paper from ICL, that 40 million people could die worldwide from COVID-19.

Discussion: it depends on the meaning of "isolation"

The old meaning

Until recently, as in the past few decades, this word meant in biomedicine nothing too far removed from the ordinary dictionary meaning: *to separate something from something else.* You might isolate the dime that made its way into your jar of pennies by dumping them all out and sorting through to pick out the dime. Similarly, you might use a centrifuge or some other technique to sort out a suspected pathogen from diseased tissue, place it in Petri dish with growth medium and see if the alleged pathogen replicates and does damage to the cells cultured in the dish. Then compare the damage *in vitrio* with that observed *in vivo* – in the diseased host. This, according to Robert Koch's influential protocol (see below) for doing microbial pathology, is a first step in pinning down a pathogen.

The next step is to re-introduce this "isolate" cultured *in vitrio* into an *in vivo* environment and see if it does its pathogenic thing – causes disease.

If so, then you isolate the pathogen again, this time from the intentionally isolate-infected host, and compare this "re-isolate" with the original "isolate" to make sure they are the same.

If so, you have found the disease-causing culprit.

This protocol for discovering pathogens met with great success in the early days of biomedicine as long as we were able to identify the microbe independently of the isolation process, that is, with larger microbes we could "see" or identify by some independent means. It helps to know what a dime looks like before trying to sort it out from pennies. Bacteria, for example, have features and behaviors that can be remarked under a microscope.

This is far less the case with viruses. Both their appearance and mechanisms of infection have still largely to be *inferred* via *chemical* (involving compounds like proteins and enzymes), *not biological,* analysis. The images proffered by electron microscopy are far from obvious both as to identification and mechanisms of infection.[9]

But to begin the task of understanding a pathogen, the symptomology/disease it causes, and candidate treatments, we need to pick out something as the target of research effort. This is hard with regard to viruses because of their size. They are *un*visible – maybe not *in*visible, but small enough that what we are able see may not be what we need to see. Otherwise, we are still on *inferential* – hence *philosophical* – ground. Success in biomedicine is about leaving behind all traces of "the philosophical." We need to grasp empirically the mechanism of infection, "the smoking gun," so to speak.

New methods, it seems, are called for. What follows attempts to describe the method that seems in play with regard to *identifying* the SARS CoV-2 virus (as well as other viruses) and *diagnosing* the disease, Covid-19, it allegedly causes.

The new meaning

"To isolate" seems to have taken on new meaning thanks to developments in the science of virology. It now means *to mix something with something then find it again*. Toss in the dime then single it out again. The new understanding of "isolation" appears to work this way: since we aren't able, except indirectly via chemical means (which unfortunately is less than definitive because chemical states can be effected via different processes), to identify a pathogen of the virus type, we must work with the only tools available to us at this level of "smallness." That means sub-biological, i.e., *chemical*, especially genomic, gene-based, tools. But genes are protein structures. Their mechanism of action is inferential. Not like bacteria and larger organisms whose characterization and study define the science of biology. These tools are at home when we are studying genetics, which like much theoretical (but not all) physics, is highly corroborated by empirical effects. Chemistry shows in nearness to physics by the regularity and invariability of its rules. Biology is several orders of magnitude messier. But keep in mind, at the end of the bio*medical* process, *it is symptomology*, experienced at a gross level, we are trying to explain and treat. Conceptually, there is a lot of inferential activity between what happens at the chemical level and what we observe at the level of the clinic. Theoretical physics is irrelevant to any practical concern or activity humans have or engage in. Gravity works no matter how you explain it. The physics behind *the symptomology of being in the world* might be different than it is and nothing would change for that *symptomology*. As in physics, viral (but perhaps not bacterial) germ theory under-determines observation.

...

The crux of the isolation worry is reasoning like this:

1. Where the disease Covid-19 is present, we will find the SARs CoV-2 virus.
2. We find SARs CoV-2.

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[9] See "Why misinterpretation of electron micrographs in SARS-CoV-2-infected tissue goes viral," *The Lancet*, Correspondence | Volume 396, ISSUE 10260, October 31, 2020.

> 3. Therefore, we have a case of Covid-19.

This is a logical fallacy. Compare an argument of the same form:

> 1. If I am a billionaire, I can afford to treat you to dinner.
>
> 2. I can afford to treat you to dinner.
>
> 3. Therefore I am a billionaire.

In both arguments, premises 1. and 2. may well be true, but the conclusions do not follow even if the premises are true. (*If only…*)

...

The situation recalls Thomas Kuhn's famous account of how scientific progress cyclically stalls and accelerates. There is an understandable but logically flawed (psychological) tendency to be loyal to a theory that has worked heretofore much of the time. Having had a track record of successfully leading to new discoveries, the loyalty is understandable. But when the logic that seems to motivate it – that *because something has worked well so far* it will always work – begins to impede progress it leads to a crisis that is only resolved by an upheaval in thinking – a new orientation or theory. The conceptual framework that delimits what is acceptable to consider must be radically revised before further breakthroughs can happen. Breaking old habits that were indeed once useful does not come easy. Germ theory's understanding of diseases may be losing its sway. The alternative, terrain theory, is partially motivating the dissent from the dominance of germ theory in the Bailey/Bevan-Smith article.

Theory *under-determination*, according to philosopher W. V. O. Quine, can be defined as follows:

> *For any theory, T, and any given body of evidence supporting T, there is at least one rival (i.e., contrary) to T that is as well supported as T.*
>
> This is a result of our inability to completely understand or gain access to the whole set of empirical evidence for any one particular situation or system, and therefore our acceptance that new evidence could be made available at any time. This thesis maintains that since there is no method for selecting between our two (or more) valid solutions, the validity of our conclusion is always in question.[10]

However, there is an *economic* reason to attend to one theory over another: one theory may be, so to speak, better "monetized." This *ought* to have nothing to do with science. But it does. Germ theory has shown itself at an advantage in this respect.

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[10] See https://www.rit.edu/cla/philosophy/quine/underdetermination.html.

The problem with the PCR test

This test detects the presence or absence of genetic material. It does so by amplifying genetic information present in the test subject to detectable levels. It does that by looking for a genetic pattern it was designed to look for. It is primed already to look for a specific pattern. This information about what it is looking for must be built-in to it. If it finds what it is designed to look for, it will magnify evidence of it to the point of offering a *yes* or *no* answer to the presence of the genetic material. If we know the organism the genetic material is associated with, then we can infer the presence of the organism (e.g., SARS CoV-2). And if we know that information, we may possibly conclude a symptomology or disease. Thus, the PCR test has been used to diagnose a disease – or some story like this has been told.

The problem is that the PCR test must be *primed* with genetic information about what it is looking for. Where does that information come from? It must be implicated in its design. How was the information determined in the first place? How was the identity of the microorganism associated with the genetic material the PCR is equipped to test for determined?

Through having isolated the pathogen, sequenced its genetic information, and made it available for designing into the PCR test.

But since traditional cell culturing is not an option for viruses because they are too small to carry out the rigorous Koch protocol, the PCR test itself was used to determine the presence or absence of the virus.

But the PCR must already know what it is looking for to find it. How does it know? We tell it. How do we know? Via the PCR test.

Do you see the problem here?

The RT-PCR – the *reverse-transcriptase polymerase chain reaction* – test has been called the “gold standard” of diagnostic tools for Covid-19. It it is circular in the sense that it supplies the information it is looking for. This is fine when you already know what you are looking for – *not fine* when you are trying to find something novel.

This is a far cry from diagnostic tools of the past.

What facilitates the fallacious reasoning is the absence of an independent method of isolating the disease-causing agent.

We have a symptomology and a test that tests for something irrelevant to explaining the symptomology.

But whence the genetic information the PCR test is primed with?

Where did we get the genetic information the PCR test is armed with? From where did it get sequenced?

It was concocted in a laboratory over the course of decades. It is synthetic product, based on scraps of genetic material from a number of sources, modified to achieve certain specs. It was well known to biomedical science for a long time before the current pandemic. That's how the PCR test got so wise to it so soon. The computer-generated genetic sequence was sitting in pieces in a databases, ready to be assembled, and available from before the time the first humans were diagnosed via the PCR test. Earlier versions of the genetic sequence that were used to identify the disease that came to be called Covid-19 were even patented.[11] If you are going to make money from a product, it is important to patent your development every step of the way. The legal trail is a matter of public record, necessarily so. Or your competitors may steal your thunder – and profits.

Analogy

Suppose you are investigating a crime and are supplied with a photograph of the suspected criminal to aid in your investigation. You find someone who matches the photograph in a circumstantially implicating location (the right neighborhood, etc.). Suppose the match is near perfect. Have you found the criminal? Can we even grant you found a *suspect?*

Without inquiring into the provenance of the photograph?

Now, to make the analogy tighter, suppose it was not even a photograph, but a sketch, an artist's impression of the suspect. Suppose further, the impression is *a composite formed by the artist from many photographs of convicted criminals*, extracting characteristics common to many criminals. You find someone who looks very much like the person in the sketch. Have you found *even the suspect* – let alone, the perpetrator?

Granted, investigations have to *start* somewhere, but without *much more work,* we do not arrive in this way at a conviction... Or a diagnosis.[12]

What to believe

Of course, we don't know, as philosophers, if *any* part of this story is true. Skepticism is an essential part of the business of philosophy. (Otherwise, we are talking religion, scientism, or commiseration.) But many of the details fit with what can be learned from other sources. (The mechanism behind PCR tests and the existence of the patents, for example.) Moreover, they also cohere with much that is well known about humans, their history, and the history and philosophy of science and biomedicine, in particular. Maybe this is one of the liabilities of an over-emphasis on STEM education at the expense of the humanities? None of this would be surprising to a historian or a thinker made critical by a broader education and understanding of what humans, scientists and non-scientists alike, have shown themselves capable and incapable of. As mentioned in my last writeup, something like this has happened before – though perhaps, not at this speed or on this scale.

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[11] David Martin, Wise Traditions Conference 2021, "Follow the Patents, Then You Will Understand Covid", (5 Nov 21).

[12] A conviction and a diagnosis are functionally similar in that they are inflection points between epistemic and ethical concerns. Conviction and diagnosis guide action. We have epistemic duties *because* we have ethical ones.

...

Next we will take a closer look at how scientific practice has been *supposed* to work, since a memory of ideals must be complicit in the vulnerability to fraud. Too much trust makes you uncritical.

Methods in science - Mill's

19th Century British philosopher John Stuart Mill, most noted for his refinement of utilitarianism and defense of political liberty, also contributed to the logic of discovery by systematizing the inductive methods central to much scientific practice. His work had particular influence in biomedicine.

Mill offered five ways we may come to inductive conclusions.

1. Method of Agreement

Suppose five people became ill after eating at a restaurant. All sat at the same table, each had different items from the menu except that all had salad. The logic linking the two common elements in the scenario, the illness and the salad, illustrates the *Method of Agreement*. By itself, this observation does not *prove* anything,[13] but it does rationally focus the direction of further research.

2. Method of Difference

Suppose *one* of five people at a different table becomes ill after eating at the restaurant. Each of these five had exactly the same items on the menu except that one had salad and the others didn't. The one who had the salad is also the one who became ill. The logic linking the two differences in the scenario, the illness and the salad, illustrates the *Method of Difference*. By itself, as in the previous scenario, while not proving anything, the observation here also focuses the direction of further research.

3. The Joint Method of Agreement and Difference

Now suppose *both* scenarios described above occur at the same restaurant on the same evening even at adjacent tables. The combined observations describe the *Joint Method of Agreement and Difference.* While still inductively only suggestive, the strength of the conclusion that something about the salad is the cause of the illness in this case seems greater. The *presence* of the salad is associated with illness and its *absence* is associated with non-illness.[14]

4. The method of residues

Suppose the restaurant only had five items on its menu and that someone got ill and died of food poisoning eating there. And that it could not be determined which item was eaten by the victim, but samples of *all but one* of the items were available to investigators. And that it was early in the 19th Century before chemical analysis could be carried out on the food items. It might occur to investigators to feed samples of each of the items available to them one by one to test subjects (let's say condemned prisoners) to see what happens. They did, and suppose *none* of the test subjects became ill. We might conclude the one item they did not have a sample of was the toxic culprit. This is the *Method of Residues*. It recalls[15] the logic behind the common sense notion of "a process of elimination."

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[13] Proof by induction is a lose adaptation of the original strict deductive/mathematical understanding of "proof." Induction is never 100% *by definition*.

[14] This comes close to offering necessary and sufficient conditions for the illness. Close, but not quite. Further steps can betaken to strengthen the conclusion. See Koch's Postulates below. If it were *not* possible to strengthen the conclusion further, we would have then succeeded in describing necessary and sufficient conditions.

5. The Method of Concomitant Variation

Finally, suppose the isolated toxic item causes illness in proportion to the amount consumed. Or to use a topical example, suppose the likelihood of infection from exposure to a pathogenic microbe directly varies with the microbial load of exposure. More exposure correlates to greater likelihood. Less exposure to smaller likelihood. We can be excused for thinking that the toxic item or microbe is the cause of illness. This is the *Method of Concomitant Variation.*

Method in bioscience - Koch's Postulates

Robert Koch was a German scientist who has been called the father of biomedicine. I quote here from an article describing the applicability of his postulates which, while not unproblematic, have been held up as a standard for doing biomedical science properly. The influence of Mill's Methods should be evident.

> Developed in the 19th century, Robert Koch's postulates are the four criteria designed to assess whether a microorganism causes a disease. As originally stated, the four criteria are:
>
> (1) The microorganism must be found in diseased but not healthy individuals; **[exclusivity]**
>
> (2) The microorganism must be cultured from the diseased individual; **[externally cultureable]**
>
> (3) Inoculation of a healthy individual with the cultured microorganism must recapitulate the disease; and finally **[re-infectivity from culture]**
>
> (4) The microorganism must be re-isolated from the inoculated, diseased individual and matched to the original microorganism. **[re-cultureable and identity established]**
>
> Koch's postulates have been critically important in establishing the criteria whereby the scientific community agrees that a microorganism causes a disease.
>
> Even Koch had to modify or bend the strictest interpretation of the first postulate. Koch discovered asymptomatic carriers of *Vibrio cholera* and *Salmonella typhi*, yielding the important distinction between asymptomatic clinical colonization and infection. Thus the field of inquiry into the intricate host-pathogen relationship was born.

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[15] It recalls *but is not identical* with the rule of elimination as used in deductive logic. In deduction, the inference to a conclusion is valid *only if the alternatives are exhaustive and all but one has been eliminated*. Exhaustiveness never happens in the world at the edge of our senses where induction *and science* operate. It never applies in medicine, in particular. This point is important as it relates to Covid-19.

From: “What does it take to satisfy Koch’s postulates two centuries later? Microbial genomics and Propionibacteria acnes,” Julia A. Segre, *Journal of Investigative Dermatology* (2013) 133, 2141–2142.[16]

Necessary and Sufficient explanations of causation

Competing ways to define:

extensional – by listing items, for example,

tree: oak, pine, maple…

intensional – by characterization, for examples, the common feature(s) of

***mammal*:** hair or fur; warm-blooded; most are born alive; the young are fed milk produced by the mother’s mammary glands, etc.

living thing: ability to reproduce; to extract energy from an environment, to expend it modifying that environment…

What about “disease”?

Is it defined extensionally as being *identical with a cluster of symptoms* or, intensionally, by *instantiating each of a list of common or invariable features?*

Some logicians (notably Bertrand Russell at one time) are partial to the first method. It seems to have a kind of openness to new content or “knowledge” by making it easy to just insert a thing into “the set” that comprises *and* defines, say, the concept of “disease” without further semantic commitments. Then just be done with the logic of it.

But this extensional method of definition is not very enlightening or conducive to understanding the features and mechanism of entities that enable *doing* something with the information that something has been classed a certain way. We want to know more than that something is a “kind” of thing. We want to know what *makes* it such. Playing fast and lose with definitions, making them *too* flexible or accommodating, is problematic. A file cabinet, by itself, is uninformative of its contents. Labels are more helpful.

For example, is the notion of a “*symptomless* disease” coherent? Like a “*victimless* crime”? Perhaps. But, if it is, our understanding of what it is to be a “disease” or a “crime” has undergone major revision, the motivation for which calls for inquiry.

How well does Covid-19 comply with the definitions and logic of disease described above? Ex.: Does every instance of the presence of the virus correspond with the symptoms correlated with the disease?

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16. The article describes genomic analysis of common skin bacteria and its relation to teenage acne. Everybody has it. Only a few get acne. At the end of the paper is an almost routine summary statement in epidemiological research: “However, even this level of resolution will only begin to satisfy Koch’s postulates. The most challenging part will be moving from association to causality.”

It is admitted there are *asymptomatic* cases of infection (or is it “presence”?) of the virus. What proportion of the population has the virus present without observable symptoms? It would be very revealing if we knew that number. To get an accurate reading of its prevalence, near universal testing would have to be done and redone. What would be the possible outcomes of such testing?

The virus may appear 1) rarely or 2) commonly or 3) with some intermediate frequency.

It’s rarity would send us back to the drawing board to explain the “epidemic” phenomenology.

It’s commonality would oblige us to explain why the pandemic is not many times worse than it is, on a par with, say, the 1918 flu or the Black Death. Why has no massive effort been taken to determine this?

Is it that we don’t have adequate[17] tests to do it? It is understandable *why not* at the beginning. Now? We are too invested in having taken a different path? Perhaps, we *don’t want* to know?

...

The fact is that even Koch discovered that a potential pathogen *may* be present *without* any manifestation of disease – unless, of course, we adjust what it means to be a manifestation of disease. Hence, either a *symptomless* disease or a *harmless* pathogen is possible. But aren’t these notions oxymoronic? Can we imagine the concept of “bachelor” changing to accommodate the possibility of *some* bachelors being married?... Perhaps, but we need to hear a pretty good story for motivating such a change.[18]

One way to relieve the semantic tension is to make distinctions, like that between:

- “asymptomatic clinical colonization,” and
- “infection,”

as suggested in the medical article cited. But having a case of the first is noticeably less alarming than the second. That has implications. What would a world-stopping pandemic of a largely “asymptomatic clinical colonization” look like? What we, in fact, have?

The virus v. bacteria problem

The difference this makes to the diagnostics of viral diseases. Keep in mind Koch had then newly discovered bacteria in mind, not the more conjectural, less empirical, notion of a virus. Though the amount of *circumstantially* corroborating evidence we have for the virus *model* today is immense, it is mostly biochemical. There are uncomfortably significant inferential leaps from this corroborating evidence to the model describing a “thing” with certain features like “red” “spikes” that is singlehandedly[19] purported to cause serious illness. The viral disease model is still deeply infused with theory in a way that is far less the case with the bacterial model. The biochemical evidence is open to being modeled differently. Corroboration of a theory is *never* proof as long as there are competing theories milling about that may do the corroboration thing as well. In other words, in contrast with viruses, bacteria have long acquired "thing" status. They have come to describe a unquestionable part of the *ontology* of medicine. The same is not as easily said yet of *pathogenic* viruses generally.[20]

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[17] In *both* senses of adequacy: are PCR tests adequate to the task? Do they test more than a genetic presence? Are they diagnostic of this or any disease? And in the sense of quantity: assuming we have accurate tests at all, do we have enough of them?

[18] Might *some* lesbians have penises? See our writeup: “What is a woman.”

[19] We are being *led* to believe. The reductive explanation seems to rest on two assumptions: first, that most people haven’t sufficient sophistication to handle the possibility of more complicated explanations and, second, motivating support for re-

How well is the mechanism of infection explained by the models employed? The models we have can suggest more than they deliver. There is the under-determination of the evidence by the model, *and* the existence of alternative models, e.g., *terrain* theory. There is a need to consider other models with different implications. The reasons they are not being taken *as* seriously are?...

What might be done to curb vaccine hesitancy?

It's a bit late in the game but here are suggestions. Better late than never, perhaps...

On being reminded that conserving hospital resources is a good reason to take the vaccine, I asked a virologist friend about it. She agreed that it is a good reason. Indeed, the sentiment is widely confirmed. It's pretty much been conventional thinking since the beginning of the pandemic when there was so much talk about "flattening the curve." The medical system is limited in resources and we ought each of us do what we can to reduce the burden on the system so the resources can be used where they are most needed. In this way, public health is maximized. This, quite apart from whether we feel *personally* at risk.

This thinking made perfect sense to me, at least at the beginning when we knew very little about the virus and had been caught by surprise by a potentially devastating global health threat. An obvious question, however, assuming the scarcity of medical resources story is true, is why this is *still the case now* almost two years later? The nature of a life-threatening emergency is that you pull out all the stops to get the crisis situation under control. The logic applies at the public level no less than at the individual level. One of those stops is *to make money no object* to ramping up measures to "stop the blood loss" (so to speak).

If money were no object, here are some things that could have been done at the beginning of the pandemic but were NOT done:

1. Nationalize every industry necessary to insure that nothing stood in the way of supplying every medical resource to treat the condition and find solutions without the distractions we accept in normal times: for example, *making it illegal for any profit to be made from developing antiviral drugs or vaccines for the treatment of this virus.* The best talent in the world would be mobilized, concentrated, and assigned the mission to find safe and effective treatments. They would have their basics needs met at public expense as we do for military recruits. Since we don't entice people with vast profits to make great sacrifices (i.e., their lives) for the public good in cases of national emergencies sufficiently grave to go to war, why should we tolerate this in health emergencies? That's what it means to take a genuine existential threat seriously. Historically, similar moves have been made in times of war – even in emergencies less urgent than war. One need look no further back than this discussion in the *New York Times*

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search requires this simplicity. Hence, nuanced explanations are banished.

[20] "Giant viruses" – which have uncontroversial *thing* status because they can be as or bigger than bacteria – are unassociated with disease.

during the banking crisis in 2008. Even in capitalist nations, government shut-downs of economic private free-for-alls have been considered and implemented for human calamities far less extreme than the current pandemic is being sold as.

2. In the meantime, if we had been serious about mitigating the spread of the disease, we should have insured that, for the duration necessary, no resource would be spared to permit every individual in society to self-isolate at home (or provided a home if they didn't have one already) without worries about how they were going to pay their bills. Something like *universal socio-economic security,* no questions asked, no requirements other than having a pulse. Food would be delivered to your door by government workers decked out in PPE. The few properly designated "essential personnel" would be compensated for the supposed extra risk exposure. The point would be to give no one a decent excuse for not isolating themselves. This did not happen in major Western countries which were positioned to afford it. (I am aware it did happen in some communities in parts of the world for short periods – until patience or resources or the credibility of the threat or some mix of these ran out.)

3. If a car manufacturer produces cars with a defective airbag system that sometimes, though rarely, triggers for no reason causing fatal accidents, they are held liable. Or a drug company makes a medication and fails to disclose or actively suppresses information of potentially deadly consequences of taking it, they are held liable. They have to pay out. That is the current law. One can imagine an emergency situation when the need and urgency is so great that we may rationally suspend this general notion of liability and offer a very circumscribed and explicitly temporary exception. But... not an indefinite one. *If vaccine companies are so sure the vaccine is safe, they must also be confident there will be a slight, but affordable, risk of payout on their part if something unfortunately goes south.* Why are they excused from all liability in perpetuity in the case of the current Covid-19 vaccines? Take away or circumscribe these liability protections and we would chip away at a reasonable person's skepticism...

The sacrifices entailed by measures like these are small in relation to the global health threat *as commonly portrayed.* It's only money, not life, after all.

These are a few from a long list of measures that might have been taken but weren't. They would have worked wonders to diminish hesitancy. Nothing is more convincing than when you see *everyone* around you showing the courage of their convictions and making great sacrifices in the service of a goal. This more than anything certifies the worthiness of the goal.

But even now I hear no consideration of measures like these. So, I think it is reasonable to conclude, *money must be an object.* In the real world, resources *do* matter. What does that mean? It must mean that health, both individual and that of the public at large, is not the *only* thing we value.

Some of us are perfectly willing take great risks for the sake of values other than our personal health. Many in the military are willing to put their lives on the line for the sake of the collective interests of their fellow nationals and their way of life (not always wisely). At least, we can say, you don't join the military because preserving your life and limb is the most precious thing in the universe for you. Mothers everywhere everyday put their lives on the line in childbirth, and, at least half of them, even voluntarily. What *else* besides physical health is a human value?… (Rightly or wrongly?) With questions of value, we are squarely in philosophical territory. It is no longer just about single issues like health-maximization and straightforward treatments, e.g., vaccines. We have to face head-on the question of *which* values from among the manifest variety we have are to be prioritized, and why.

The core of the argument goes something like this: *Either* the direness of the pandemic is overstated *or* it really is catastrophic. Or, possibly, something in between. But if it is anything less than a threat to our collective existence, it leaves open the door for *other* human values to insert themselves without straining rationality. That is why one need not be mad, irresponsible, or block-headed to have doubts about the current crop of vaccines or many other pandemic measures. (And this without getting into the messy science behind the scenes… which adds still another layer of cause for skepticism.)

I am not a principled anti-vaxxer. I have had vaccines that most people haven't, such as the one for rabies. But that one is the gold standard among vaccines for safety and efficacy. Nor am I anti-science in any way. Quite the opposite. Hardly a day goes by since I was a kid that I don't read an article about some scientific development. I have taught college level philosophy of science to students who would later go into careers in science and medicine. It's precisely because I know a bit too much about how science is *supposed* to work and how that contrasts with how it *actually* works, given the way the world in organized, that I have chosen not to take these vaccines. Might I some day take a better vaccine, one with more history and scientific rigor behind it? Very possibly.

Nothing, however, strictly follows from this about the appropriate risk/benefit analysis for people in general. There are all kinds of reasons why it makes sense for *some* people to take these vaccines, as imperfect as they are and as incomplete as our knowledge about them may be. Comorbidities, job pressures, social pressures, public roles, etc... The calculations come out differently depending on the relevant facts and values you input.

What does not follow from this concession is that the shoe is a universal fit. Still… enough conviction backed up by genuine sacrifice on the part of *everyone* concerned would inspire much compliance even in the face of doubt. Causing stockholders, too, a little temporary pain would go a long way toward putting us all in a cooperative frame of mind.

Resources

As mentioned in the footnote above, the book *Virusmania* (2006 original, 2020 revised) is the best single documented source for skepticism regarding the existence of the virus SARs-CoV-2 and all that entails. This is because it traces the long checkered history of virology. The current pandemic is only the latest chapter.

Causality in epidemiology: video explanation of three ways to understand causality in epidemiological contexts (though much of this applies to other areas of science). Most relevant to our topic are Koch's postulates and Rothman's necessary and sufficient analysis. (The latter closely follows a common practical reasoning analysis in philosophy.)

Politics and authoritarianism are ruining science || Dave Collum “Scientists have been censored for questioning narratives, prompting many to blame politics and increased authoritarian ideology. Dave Collum is an organic chemistry professor at Cornell University.” Interview by Alison Morrow of Professor Collum.

I am working on extensive index of information and documentation regarding many aspects of the pandemic which will be added here when it is more complete.

Images:

- SARS CoV-2 Electron microsscope
- Exoplanets, another
- Unicorns

Extended writeup for the topic hosted at

The Philosophy Club in January 2022

– Victor Muñoz

Oaxaca / Seattle